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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,616	05/08/2002	Y. Tom Tang	PF-0662 USN	6963

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EXAMINER	
STEADMAN, DAVID J	
ART UNIT	**PAPER NUMBER**
1652	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,616	TANG ET AL.	
	Examiner	Art Unit	
	David J Steadman	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6,8-10,12,15,16 and 24-27* is/are pending in the application.

4a) Of the above claim(s) *3,5,6,9,10,12 and 24-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,8,15 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

[1] Claims 1-3, 5-6, 8-10, 12, 15-16, and 24-27 are pending in the application.

[2] Applicants' amendment to the claims, filed March 11, 2004, is acknowledged. This listing of the claims replaces all prior versions and listings of the claims.

[3] Applicants' amendment to the specification, filed March 11, 2004, is acknowledged.

[4] Receipt of an information disclosure statement (IDS), filed March 11, 2004, is acknowledged. The examiner has considered all cited references and a copy of the IDS is attached to the instant Office action.

Lack of Unity

[5] Applicants' election with traverse of the invention of Group XVI, claims 1-2, 8, and 15-16, drawn to the special technical feature of an isolated polypeptide of SEQ ID NO:19, the first claimed method of making, a pharmaceutical composition comprising a polypeptide, and the first claimed method of use, i.e., a method of using a pharmaceutical composition comprising a polypeptide for treating a disease, filed March 11, 2004, is acknowledged.

Applicants assert the unity of invention standard must be applied in national stage applications. Applicants cite MPEP §§ 1800 and 1850 in support of their assertion. In response to applicant's statements, it is noted that the unity of invention standard was applied to original claims 1-23 in evaluating the claims for unity of

invention and restriction practice according to 35 U.S.C. 121 and 372. MPEP § 1893.03(d) states, "If the examiner finds that a national stage application lacks unity of invention under § 1.475, the examiner may in an Office action require the applicant in the response to that action to elect the invention to which the claims shall be restricted." Also, according to PCT Rule 13.2, unity of invention exists only when the shared same or corresponding technical feature is a contribution over the prior art. As stated in the Office action mailed February 10, 2004, the inventions of original claims 1-23 do not relate to a single general inventive concept for the reasons set forth therein. As such, in accordance with MPEP § 1893.03(d), the examiner properly applied the unity of invention standard to original claims 1-23 in the instant application.

Applicants argue that in view of Example 17, Part 2 of Annex B to the Administrative Instructions Under the PCT, the examiner should withdraw the lack of unity requirement with respect to the polypeptide claims (claims 1-2, 8, and 15-16) and polynucleotide claims (3-6 and 10-11). Applicants argue that claims 1-3, 5-6, 9, 11, and 15-16 should be examined in a single application. Applicants' argument is not found persuasive.

It is noted that applicants argument regarding co-examination of polypeptide and polynucleotide claims 1-3, 5-6, 9, 11, and 15-16 in a single application is confusing as claim 9 is an antibody, which is neither a polypeptide nor a polynucleotide and is further confusing as claim 11 has been canceled. In the interest of advancing prosecution and in accordance with MPEP 707.07(f), it is noted that, according to PCT Rule 13.2 unity of invention exists only when the shared same or corresponding special technical feature

is a contribution over the prior art. The claimed polypeptide, methods of making and using of claims 1-2, 8, and 15-16 and the claimed polynucleotide of claims 3, 5-6, and 10 do not relate to a single general inventive concept because they lack the same or corresponding special technical feature. The technical feature of Group XVI is a polypeptide, which is shown by Sigma Chemical Company 1993 Catalog to lack novelty or inventive step because Sigma Chemical Company 1993 Catalog page 247 teaches a biologically active fragment of SEQ ID NO:19, i.e., a Gly-Gln dipeptide, corresponding to amino acids 133-134 of SEQ ID NO:19 and does not make it a contribution over the prior art. Also, according to PCT Rule 13.2, unity of invention exists only when there is a shared same or corresponding special technical feature among the claimed inventions. The special technical feature of claims 3, 5-6, and 10 is a polynucleotide, which encompasses polynucleotides that do not correspond to the polypeptide of claims 1-2, 8, and 15-16 (see particularly the polynucleotide of claim 10 part b) and the polynucleotide of claim 26). Therefore, the polynucleotide of claims 3, 5-6, and 10 does not share a corresponding special technical feature with the polypeptide of claims 1-2, 8, and 15-16, and consequently, the claimed polypeptide and polynucleotide do not have unity of invention.

Applicants cite sections of MPEP 1800 as allegedly supporting their argument that the antibody of claim 9 and compositions of matter of claims 2-3, 5-6, 9, and 15 should be co-examined with the claimed polypeptide because unity of invention allegedly exists with respect to dependent claims in the same claim category as the

independent claim from which they depend. Applicant's argument is not found persuasive.

As stated above, there is no unity of invention between the claimed polypeptide and the claimed polynucleotide. Therefore, composition claims dependent from claims drawn to the polypeptide, e.g., claim 9, drawn to an antibody that binds the polypeptide, do not have unity of invention with the polypeptide of Group XVI because the claimed polynucleotide (particularly the polynucleotide of claim 10 part b) and the polynucleotide of claim 26) shares no corresponding technical feature with the polypeptide of Group XVI (for the reasons cited above) and the technical feature of the polypeptide of Group XVI was known in the art at the time of the invention. Furthermore, applicant's argument that claims 3, 5-6, and 9 have unity of invention with the claim from which they depend, i.e., the polypeptide of claim 1, is misplaced. As is further explained in MPEP § 1850, if an independent claim does not avoid the prior art, then the question of whether there is still an inventive link between all the claims dependent on that claim needs to be carefully considered. If there is no link remaining, an objection of lack of unity may be raised. As has been there is no inventive link between the polypeptide of Group XVI, the polynucleotide, and the antibody (for the reasons stated above), the claimed polynucleotide, polypeptide, and antibody do not have unity of invention. It should be noted that claims drawn to the polynucleotide and antibody which depend from claim 1 are not dependent claims that have unity of invention within the meaning of MPEP § 1850(A) as the polynucleotide claims and the antibody claim, which depend from the

polypeptide claims of Group XVI do not have all the features of the polypeptide, i.e., polypeptides, polynucleotides, and antibodies are *chemically distinct* compounds.

Applicant argues the claimed polypeptides and encoding polynucleotides are corresponding technical features, which are common to all pending claims, which serve to technically interrelate all pending claims, and which define the contribution over the prior art. Applicant argues the pending claims are linked to form a single general inventive concept, and applicant is therefore entitled to prosecute all pending claims in a single application. Applicants' argument is not found persuasive.

The claimed polypeptide does not have unity of invention with the claimed polynucleotide, microarray, methods of use thereof, or antibody as the polypeptide of Group XVI is shown by Sigma Chemical Company 1993 Catalog to lack novelty and the polynucleotide (particularly the polynucleotide of claim 10 part b) and the polynucleotide of claim 26) encompasses polynucleotides that do not correspond to the polypeptide of Group XVI, as explained in detail above.

Applicant argues there is minimal additional burden to examine claims 9-10, 12, 15, and 24-27. Applicant argues the search for the subject matter of these claims should substantially overlap with the examination of the polypeptide of Group XVI. Applicants' argument is not found persusasive.

It is noted that applicants' argument regarding co-examination of claim 15 is confusing as claim 15 is included in elected Group XVI (see the original claim grouping as set forth in the Office action mailed February 10, 2004), i.e., claim 15 is not excluded from the elected group, and thus, applicants' argument is moot. Regarding the claims

drawn to the polynucleotide, microarray, and methods of use thereof, it is noted that a separate sequence search is required, thus requiring a serious burden on the examiner. Regarding the claim drawn to the antibody, it is noted that a search is required not only for those antibodies that bind SEQ ID NO:19, but also for antibodies that bind similar polypeptides to assess their ability to bind the claimed polypeptide and thus act as an antibody to the claimed polypeptide. As a separate search is required, this would place a serious burden on the examiner.

[6] Applicants' request for rejoinder of claim 8 as being drawn to a method for producing the polypeptide of Group XVI is acknowledged. Applicants' argument is confusing as this claim is included in elected Group XVI (see the original claim grouping as set forth in the Office action mailed February 10, 2004), i.e., claim 8 is not excluded from the elected group, and thus, applicants' request is moot.

[7] The requirement is still deemed proper and is therefore made FINAL.

[8] Claims 3, 5-6, 9-10, 12, and 24-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

[9] Claims 1-2, 8, and 15-16 are being examined on the merits.

Priority

[10] Applicants' claim to domestic priority under 35 USC 119(e) to provisional applications 60/117,905, filed 01/29/1999, and 60/117,904, filed 01/29/1999, is acknowledged. It is noted that the specification has been amended (see the amendment

filed March 11, 2004) such that the instant application claims priority to those applications cited above. It is further noted that SEQ ID NO:19 of the instant application is disclosed as SEQ ID NO:19 in provisional application 60/117,905.

Specification/Informalities

[11] The attempt to incorporate subject matter into this application by reference to a hyperlink embedded in the specification (e.g., page 14, line 9) is improper. Incorporation of subject matter into the patent application by reference to a hyperlink and/or other forms of browser-executable code is considered to be an improper incorporation by reference. See MPEP 608.01 regarding hyperlinks in the specification and 608.01(p), paragraph I regarding incorporation by reference.

[12] The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: -- Human Polypeptide Homologous to a C2H2 Zinc Finger Protein --.

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[13] Claim(s) 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is indefinite in the recitation of "a disease or condition associated with decreased expression of functional NuABP". The specification defines the term "NuABP" as, "the amino acid sequences of substantially purified NuABP obtained from any species, particularly a mammalian species, including bovine, ovine, porcine, murine, equine, and human, and from any source, whether natural, synthetic, semi-synthetic, or recombinant" (page 8, bottom). However, it is unclear from this definition of the term "NuABP" as to the scope of those diseases that are considered to be associated with decreased expression of functional NuABP and those that are not. Furthermore, it is unclear as to the intended function of an NuABP, such that a skilled artisan could distinguish between a functional and non-functional NuABP. It is suggested that applicants clarify the meaning of the term "a disease or condition associated with decreased expression of functional NuABP".

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

[14] Claims 1-2, 8, and 15-16 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or well-established utility. The claims are drawn to a polypeptide comprising SEQ ID NO:19, variants and fragments thereof, a method for producing a polypeptide, a pharmaceutical composition comprising a polypeptide, and a method of treating a disease or condition.

The specification provides the following asserted uses for the claimed polypeptide: use "in the diagnosis, treatment, and prevention of reproductive, immune, and neurological disorders, and cell proliferative disorders including cancer" (page 1, lines 3-4) and "useful in the diagnosis, prevention, and treatment of reproductive, immune, and neurological disorders, and cell proliferative disorders including cancer" (page 4, lines 25-27). However, these asserted utilities are not substantial as further research is required to identify a "real world" use for the claimed polypeptide due to the failure of the specification to provide the necessary guidance for using the claimed polypeptide for diagnosis, prevention, and treatment of reproductive, immune, and neurological disorders, and cell proliferative disorders including cancer. The specification fails to provide any guidance regarding those specific diseases – if any – that can be diagnosed, prevented, or treated and/or guidance for diagnosing, preventing, or treating a specific disease. Instead, the specification merely provides a vast number of diseases and disorders (see pages 30-31) without providing specific guidance regarding a disease or diseases that can be diagnosed, prevented, or treated and without providing specific guidance as to how one would specifically treat such a disease, e.g., route of administration and dosage.

The specification identifies SEQ ID NO:19 as a "C2H2-type zinc finger protein" and discloses that the amino acid sequence of SEQ ID NO:19 is "homologous" to GI 429188 having GenPept Accession Number AAA03481 (page 63). A sequence alignment of SEQ ID NO:19 with GenPept Accession Number AAA03481 indicates that the two sequences have 89% amino acid sequence identity (see Appendix A). GenPept

Accession Number AAA03481 describes the disclosed polypeptide sequence as a zinc finger protein, citing Smith et al. (Development 116:1033-1039). However, it is noted that neither GenPept Accession Number AAA03481 nor Smith et al. (supra) provides evidence that would indicate that SEQ ID NO:19 has use for diagnosis, prevention, and treatment of reproductive, immune, and neurological disorders, and cell proliferative disorders including cancer.

In view of the lack of guidance for using the claimed polypeptide, pharmaceutical composition, and method for the asserted utilities of diagnosis, prevention, and treatment of reproductive, immune, and neurological disorders, and cell proliferative disorders including cancer, the asserted utilities are not substantial. See *Brenner v. Manson,* 383 U.S. 519, 148 USPQ 689 (Sup. Ct. 1966). The specification must teach a skilled artisan how to use what is claimed and not merely provide a blueprint for further experimentation in order for an artisan to identify a use for the claimed invention. As stated in *Brenner v. Manson*, 383 U.S. 519 535-536, 148 USPQ 689, 696 (1966), "[a] patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion". Here the specification fails to provide a specific benefit in currently available form for the claimed polynucleotide.

[15] Claims 1-2, 8, and 15-16 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

[16] Claims 1, 8, and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of he claimed invention.

Claim 1 (claims 8 and 15-16 dependent therefrom) is drawn to (in relevant part) a genus of polypeptides comprising a naturally occurring amino acid sequence at least 90% identical to SEQ ID NO:19. For claims drawn to a genus, MPEP § 2163 states the written description requirement for a genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. See Eli Lilly, 119 F.3d at 1568, 43 USPQ2d at 1406. MPEP § 2163 states that a representative number of species means that the species that are adequately described are representative of the entire genus. Thus, when there

is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. In this case, the specification discloses only a single representative species of the claimed genus of polypeptides, i.e., SEQ ID NO:19. The genus of claimed polypeptides encompasses species that are WIDELY variant in their structures and functions. As such, the disclosure of the single representative species is insufficient to be representative of the attributes and features of all species encompassed by the claimed genus. Given the lack of description of a representative number of polypeptides, the specification fails to sufficiently describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize that applicant was in possession of the claimed invention.

Furthermore, it is noted that the genus of claimed polypeptides of claim 1 part b) is limited to those that are "naturally occurring". The Court of Appeals for the Federal Circuit has recently held that a "written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as be structure, formula [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." University of California v. Eli Lilly and Co. 43 USPQ2d 1398 (Fed. Cir. 1997), quoting Fiers v. Revel, 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Also, MPEP § 2163 states (citing Amgen, 927 F.2d at 1206, 18 USPQ2d at 1021), "A gene is a chemical compound, albeit a complex one, and it is well established in our law that conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials". In this case, the specification fails to provide those characteristics that distinguish the

subgenus of "naturally occurring" polypeptides within the identity limitation of the claim from the larger genus of polypeptides that includes both "naturally occurring" and non-naturally occurring polypeptides. For the reasons stated above, the specification fails to provide adequate written description for the recited genus of polypeptides.

[17] Even if applicant demonstrates the polypeptide of SEQ ID NO:19 has a specific and substantial or well-established utility, the following rejection still applies. Claim(s) 1, 8, and 15-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the polypeptide of SEQ ID NO:19, does not reasonably provide enablement for the broad scope of the claimed polypeptides, including all polypeptides comprising a naturally occurring amino acid sequence that is at least 90% identical to SEQ ID NO:19.

It is the examiner's position that undue experimentation would be required for a skilled artisan to make and/or use the entire scope of the claimed compound. Factors to be considered in determining whether undue experimentation is required are summarized in *In re Wands* (858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)) as follows: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure. See MPEP § 2164.01(a). The Factors most relevant to the instant rejection are addressed in detail below.

- The claims are overly broad in scope: Claim 1 (claims 8 and 15-16 dependent therefrom) is so broad as to encompass all polypeptides comprising a naturally occurring amino acid sequence that is at least 90% identical to SEQ ID NO:19. The broad scope of claimed polypeptides is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of polypeptides broadly encompassed by the claims. In this case the disclosure is limited to the polynucleotide of SEQ ID NO:19.

- The lack of guidance and working examples: The specification provides only a single working example of the claimed polypeptide, i.e., SEQ ID NO:19. This single working example fails to provide the necessary guidance for making and/or using the entire scope of polypeptides. The specification fails to provide guidance for isolating all polypeptides encompassed by the scope of the claim and further fails to provide guidance for using those naturally occurring variants of SEQ ID NO:19 that have a distinct biological activity or activities.

- The high level of unpredictability in the art: The specification discloses that the naturally occurring variants of SEQ ID NO:19 can be isolated using a SEQ ID NO:19-specific antibody (page 54, lines 5-15). The amino acid sequence of a polypeptide determines the ability of a cognate antibody to recognize an epitope within the polypeptide. It is highly unpredictable as to which changes in a protein's amino acid sequence can be made without disrupting antibody binding. In addition, one skilled in the art would expect any tolerance of antibody binding to diminish with each further and additional amino acid modification. Even if one were to succeed in isolating a variant

using a SEQ ID NO:19-specific antibody, it is highly unpredictable as to whether the isolated variant will exhibit the same activity as SEQ ID NO:19.

- The state of the prior art supports the high level of unpredictability: The state of the art provides evidence for the high level of unpredictability for isolating variants of SEQ ID NO:19 using a SEQ ID NO:19-specific antibody. For example, Colman (Res Immun 145:33-36) teaches that "[s]ingle amino acid sequence changes within the interface of an antibody-antigen complex... ...can effectively abolish the [antibody-antigen] interaction entirely" (page 33, right column). Furthermore, it is known in the art that two naturally occurring polypeptides that have a high degree of amino acid sequence identity can have different functions (see e.g., Seffernick et al. J Bacteriol 183:2405-2410). Thus, the state of the art supports the examiner's position that the specification fails to provide guidance for making and using the entire scope of claimed polypeptides.

- The amount of experimentation required is undue: While methods of isolating polypeptides using an antibody as an affinity purification reagent are known, it is not routine in the art to screen for all polypeptides having a substantial number of substitutions or modifications and having *any* function, as encompassed by the instant claims. Thus, in view of the overly broad scope of the claims, the lack of guidance and working examples provided in the specification, and the high degree of unpredictability as evidenced by the prior art, undue experimentation would be necessary for a skilled artisan to make and use the entire scope of the claimed invention.

As such, applicant has not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims. The scope of the claims must bear a reasonable correlation with the scope of enablement (*In re Fisher*, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of having the desired biological characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See *In re Wands* 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

[18] Claim(s) 1 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Sigma Chemical Company 1993 Catalog. Claim 1 (in relevant part) is drawn to a biologically active fragment of SEQ ID NO:19. Claim 15 is drawn to a pharmaceutical composition comprising the polypeptide of claim 1. Sigma Chemical Company 1993 Catalog page 247 teaches a biologically active fragment of SEQ ID NO:19, i.e., a glycylglutamine dipeptide, corresponding to amino acids 133-134 of SEQ ID NO:19.

Sigma Catalog further teaches that glycylglutamine is a neuroinhibitory peptide and is provided as a hydrate. This anticipates claims 1 and 15 as written.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[19] Claim(s) 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigma Chemical 1993 Catalog in view of Parish et al. (1983) Nature 306:267-270. Claim 8 is drawn to a method of recombinantly producing the polypeptide of claim 1 using a host cell.

Sigma Chemical 1993 Catalog discloses the teachings as described above.

Parish et al. teach isolation of a glycylglutamine dipeptide from porcine pituitary (see Figure 2 caption at page 268).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sigma Chemical 1993 Catalog and Parish et al. to recombinantly produce a glycylglutamine dipeptide instead of isolating the dipeptide from porcine pituitary. One would have been motivated to recombinantly produce a glycylglutamine dipeptide instead of isolating from porcine pituitary because recombinant production has the capability of producing large amounts of a given

protein, as would be needed for commercial availability as evidenced by Sigma Catalog, without need of obtaining and extracting the dipeptide from porcine pituitary. One would have a reasonable expectation of success for recombinantly producing a glycylglutamine dipeptide instead of isolating it from porcine pituitary because of the level of the ordinarily skilled artisan and the state of the art at the time of the invention. Therefore, claim 8, drawn to a method for producing a polypeptide would have been obvious to one of ordinary skill in the art.

Conclusion

[20] Status of the claims:

- Claims 1-3, 5-6, 8-10, 12, 15-16, and 24-27 are pending.
- Claims 3, 5-6, 9-10, 12, and 24-27 are withdrawn from consideration.
- Claims 1-2, 8, and 15-16 are rejected.
- No claim is in condition for allowance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Steadman, whose telephone number is (571) 272-0942. The Examiner can normally be reached Monday-Friday from 7:00 am to 5:00 pm. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. The FAX number for submission of official papers to Group 1600 is (703) 872-9306. Draft or informal FAX communications should be directed to (571) 273-0942. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Art Unit receptionist whose telephone number is (703) 308-0196.

David J. Steadman, Ph.D.
Patent Examiner
Art Unit 1652

04-13-04

APPENDIX A

```
AAA03481
LOCUS       AAA03481                 264 aa            linear   ROD 27-APR-1993
DEFINITION  zinc finger protein.
ACCESSION   AAA03481
VERSION     AAA03481.1  GI:429188
DBSOURCE    locus MUSZINCF accession M95604.1
KEYWORDS    .
SOURCE      Mus musculus (house mouse)
  ORGANISM  Mus musculus
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
REFERENCE   1  (residues 1 to 264)
  AUTHORS   Smith,D.E., Franco del Amo,F. and Gridley,T.
  TITLE     Isolation of Sna, a mouse gene homologous to the Drosophila genes
            snail and escargot: its expression pattern suggests multiple roles
            during postimplantation development
  JOURNAL   Development 116 (4), 1033-1039 (1992)
  MEDLINE   93201990
   PUBMED   1295727
REFERENCE   2  (residues 1 to 264)
  AUTHORS   Gridley,T.
  TITLE     Direct Submission
  JOURNAL   Submitted (13-OCT-1992) Thomas Gridley, Department of Cell and
            Developmental Biology, Roche Institute of Molecular Biology, Roche
            Research Center, Nutley, N.J. 07110 USA
COMMENT     On Nov 29, 1993 this sequence version replaced gi:202458.
            Method: conceptual translation.
FEATURES             Location/Qualifiers
     source          1..264
                     /organism="Mus musculus"
                     /db_xref="taxon:10090"
     Protein         1..264
                     /product="zinc finger protein"
     CDS             1..264
                     /gene="Sna"
                     /coded_by="M95604.1:15..809"

  Query Match             88.8%;  Score 1259;  DB 1;  Length 264;
  Best Local Similarity   87.9%;  Pred. No. 0;
  Matches  232;  Conservative   14;  Mismatches   18;  Indels    0;  Gaps    0;

Qy          1 MPRSFLVRKPSDPNRKPNYSELQDSNPEFTFQQPYDQAHLLAAIPPPEILNPTASLPMLI 60
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Db          1 MPRSFLVRKPSDPRRKPNYSELQDACVEFTFQQPYDQAHLLAAIPPPEVLNPAASLPTLI 60

Qy         61 WDSVLAPQAQPIAWASLRLQESPRVAELTSLSDEDSGKGSQPPSPPSPAPSSFSSTSASS 120
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Qy        121 LEAEAYAAFPGLGQVPKQLAQLSEAKDLQARKAFNCKYCNKEYLSLGALKMHIRSHTLPC 180
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Qy        181 VCGTCGKAFSRPWLLQGHVRTHTGEKPFSCPHCSRAFADRSNLRAHLQTHSDVKKYQCQA 240
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Db        181 VCTTCGKAFSRPWLLQGHVRTHTGEKPFSCSHCNRAFADRSNLRAHLQTHSDVKRYQCQA 240

Qy        241 CARTFSRMSLLHKHQESGCSGCPR 264
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Db        241 CARTFSRMSLLHKHQESGCSGGPR 264
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